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U. S. DEPARTMENT OF AGRICULTURE.

FARMERS' BULLETIN No. 166.

# CHEESE MAKING ON THE FARM.

COMPILED BY

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## LETTER OF TRANSMITTAL.

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UNITED STATES DEPARTMENT OF AGRICULTURE,  
BUREAU OF ANIMAL INDUSTRY,

*Washington, D. C., March 3, 1903.*

SIR: I have the honor to transmit herewith the manuscript of an article entitled "Cheese making on the farm," and to recommend the publication of the same as a Farmers' Bulletin. It was submitted by Henry E. Alvord, Chief of the Dairy Division, and when published in the form recommended will afford a convenient means for answering frequent inquiries for plain directions for making cheese in a small way in the household on the farm. The bulletin is composed principally of descriptions which have been taken from the writings of well-known authorities upon the subject treated.

Respectfully,

D. E. SALMON,  
*Chief of Bureau.*

Hon. JAMES WILSON,  
*Secretary of Agriculture.*

Dy. 45

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# CHEESE MAKING ON THE FARM.

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## INTRODUCTION.

There is a popular impression that the manufacture of cheese in this country has been so completely transferred to the factory system, during the last half century, as practically to abolish cheese making on dairy farms. But the agricultural returns of the Twelfth United States Census show that in the year 1899 there were still 15,670 farms upon which dairy cheese was made. The quantity produced on these farms during that year was 16,372,330 pounds, an average of 1,045 pounds per farm. This product constituted almost  $5\frac{1}{2}$  per cent of all the cheese made in the United States.

It is the purpose of this bulletin to furnish for the farm and the farm household a brief description of the most approved methods employed in the manufacture of several varieties of cheese, producers of wide experience having been consulted in compiling the information herein contained.

## HOW TO MAKE FARM DAIRY CHEESE.

The ordinary process by which our American cheese is made in factories is not applicable to the farm dairy, because it takes too much time, and is so complicated that it requires years of practice to become sufficiently familiar with the varying conditions in which milk comes to the vat. The various changes that take place in milk and which are troublesome in making cheese nearly all develop in the night's milk kept over until the following morning. So if milk is made into cheese immediately after it is drawn, no difficulty need be experienced. By employing a simple and short method of manufacture, anyone at all accustomed to handling milk can, with the appliances found in any well-regulated farm home, make uniformly a good cheese.

## DETAILS OF MANUFACTURE.

**Aeration and Cooling.**—The best time to make farm dairy cheese is immediately after milking. First pour the milk from one vessel to another in some locality where the air is pure and fresh, raising the vessel well so that the air can pass through the milk as it is poured out and carry off the animal heat and odor. Then pour the milk into the vat, or, if no regular vat is at hand, use a large wash boiler.

**Coloring.**—If it is desired to have more than the natural color, so that the cheese will look rich, add about a teaspoonful of cheese color to 16 gallons of milk. To do this properly take a large dipper half full of milk, mix in the color thoroughly, and stir the whole into the vat of milk.

**Rennet.**—Now add rennet extract at the rate of 1 ounce to 100 pounds, or 12 gallons, of milk. Mix the extract with half a dipper of cold water and then pour into the milk. Rennet tablets may be used instead of the extract, one small tablet for every 5 gallons of milk, or one large tablet for 25 gallons. Small tablets are about the size of a dime; large tablets are about as large as a silver quarter of a dollar. Dissolve the tablets required in a small quantity of cold water, then pour into the milk. The rennet extract or the tablets may be procured from any dairy supply house and at many drug stores.

**Temperature.**—Great care should be taken not to have the milk at a temperature below 86° F. nor above 90° when the rennet is put in.

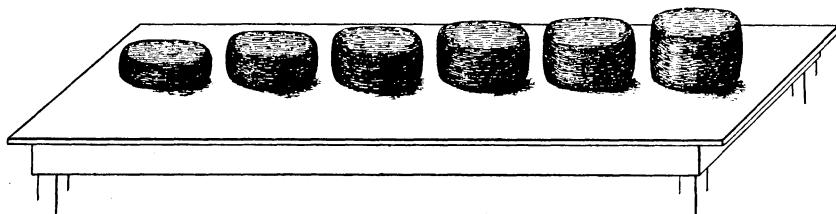


FIG. 1.—Various sizes of farm dairy cheese.

**Curdling.**—After the rennet is put into the milk, stir gently two or three minutes, then let stand until the curd is firm enough to cut. The milk should begin to curdle in from ten to twelve minutes. To ascertain when the curd is ready for cutting, push the forefinger into the milk at an angle of 45° until the thumb touches the milk; make a slight notch in the curd with the thumb, then gently raise the finger; if the curd breaks clean across the finger without any flakes remaining on it, the curd is ready for cutting. A little practice will soon enable the operator to tell the best time to cut.

**Cutting.**—For cutting, regular cheese knives are best, one with horizontal blades and one with perpendicular blades. In case it is intended to make only a few cheeses, a wire toaster may be used, the wires only about a half an inch apart. First cut lengthwise, then crosswise of the vat or boiler, until the curd is cut into cubes about the size of small kernels of corn.

**Cooking.**—After cutting, stir the curd gently for about three minutes, then heat slowly to 98° or 100° F., constantly stirring gently while the curd is being heated. Keep the curd at this temperature for about forty minutes. To tell when the curd is sufficiently cooked, take a handful and press it gently, hold for a moment, then open the

hand, and if the curd falls apart it is firm enough. As soon as the curd is sufficiently cooked, draw off the whey. Then the curd is ready to put into the cheese mold, or hoop.

**Molding.**—Fill the mold by taking a double handful of curd at a time and pressing in gently until the mold is full and well rounded up. Regular Gouda molds are best, but any tin or wooden receptacle will answer if small holes are made in it to allow the whey to escape. The cheese should be from 8 to 10 inches in diameter and about 3 inches thick. Then take the cheese out of the mold and turn it upside down and replace it. Put on the cover and put the cheese to press.

**Pressing.**—The press may be a simple lever and weight described as follows: The lever should be about 12 feet long; a broken wagon tongue answers the purpose very well. Set a strong box, on which the mold may be placed, about 3 feet from a wall, post, or tree; on the latter nail a slat and under it put one end of the lever. Put a circular board about 6 inches in diameter upon the mold and on this rest the stick or lever. A pail containing a few cobblestones will

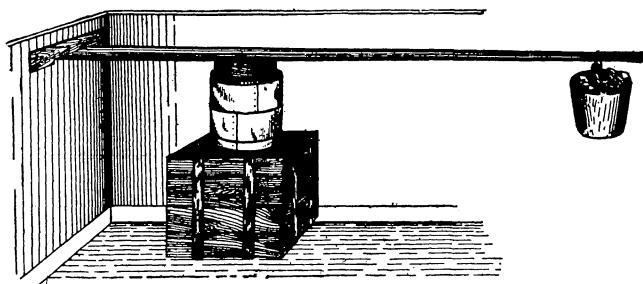


FIG. 2.—Farm dairy cheese press.

answer for the weight. Do not apply full pressure at first, but let the weight hang about halfway between the mold and the outer end of the stick. Let the cheese remain a few hours in the press; then take out and dress.

**Dressing.**—To dress a cheese, first put it in warm water for a few moments and then wipe dry and rub smooth. Take a piece of linen cloth about 6 inches wide and long enough to go around the cheese and lap over a few inches. Wrap the cloth smoothly around the cheese, folding the edges down carefully over the sides; then put a circular cap of cloth of suitable size on each side. Replace the cheese in the mold, with the bandage or dress all smooth, and put it under the press, moving the pail to the end of the stick. Leave the cheese in the press for about twenty hours; then take it out and salt it.

**Salting.**—The cheese may be either dry salted or brine salted. Brine salting is the better way. Make a solution of salt and water as strong as it can possibly be made; put the cheese into this brine and sprinkle some salt on the surface which is exposed as it floats. Leave the

cheese in brine for two and a half days, turning it over every twelve hours. For dry salting rub salt onto the cheese, and all over it, twice a day for three or four days.

**Curing.**—Next, put the cheese on a shelf in the cellar for curing. It must be turned and rubbed with the palm of the hand every day for a week or two; after that twice a week will suffice. While curing, cheese should occasionally be wiped with a cloth dampened in warm water, and if it gets a rough rind smooth it by using a brush and warm water. The temperature best adapted for curing is from 55° to 65° F., and the air should be as moist as possible. A cellar with a suitable and even temperature and not too dry is therefore a good place for curing. The cheese will be ready for use in from two to four months. The lighter the cheese is salted the sooner it will be ready for use, and the more the curd is cooked the slower it will be in ripening and the longer it will keep.

Cheese made as here described is more like the Dutch Gouda than any other of the standard varieties. (From a circular issued from the Minnesota Dairy School by Prof. T. L. Haecker.)

#### **HOW TO MAKE SMALL CHEESE.**

It is difficult to give necessary directions for successfully making cheese to one not accustomed to "curd mixing." Until the operator has gained experience by practice, the result of making cheese from such printed directions can not be guaranteed. But some principles and rules may be given which ought to prove a fairly satisfactory guide to experimental practice, if good judgment be used in their application.

We will assume that we use 500 pounds of milk testing 4 per cent fat. If the quantity of milk used be more or less, the amount of rennet, salt, etc., should be proportionate. The night's milk should be well aired, cooled, and kept at a temperature of 65° F. Take the fresh morning milking and mix the night's milk with it in a vat or tub not more than 20 inches deep; 15 inches will be better, as the curd will cook more thoroughly and with less danger of packing in the bottom. A very simple and effective way of heating the milk is by using two small cans, 7 inches in diameter and high enough to extend above the surface of the milk. Fill these cans with hot water and move them around in the vat until the milk is warmed to 84° F.

When colored cheese is desired, add one-half ounce of some standard cheese color, mixed with half a pint of water, and stir thoroughly into the milk. Put 1½ ounces of rennet extract into half a pint of cold water (do not use warm water or allow the mixture to become warm) and add to the milk, stirring for two minutes. The mass will coagulate and be ready to cut in about twenty-five minutes. The curd is ready to cut when it will break clean over the finger. If no cheese knife is at hand, use a piece of galvanized woven-wire netting, about

6 by 15 inches, with a half-inch mesh, drawing it through the mass lengthwise and crosswise. This of course is a crude way of cutting, but it will serve the purpose of breaking the mass and starting the whey. Keep the mass stirred so that the small cubes will remain separate. The heating cans should be again used in ten minutes. Keep them moving around in the vat and also move the curd well in order to prevent any portion of the latter from becoming overheated. When the thermometer registers 98° F., take out the cans and stir the mass until the cubes of curds do not readily adhere; then stir occasionally until ready for the mold. This point is not easily determined. The old way of deciding this was to take off the whey when the curd squeaks between the teeth, which is by no means a bad method. It would be better to depend upon the feeling and the smell, but beginners may use the first rule mentioned, aided by the feeling. Take a handful of curd and squeeze it hard. If it has an elastic feeling, showing it to be well dried out, then drain off the whey. Keep the curd well stirred until it is cool and free from moisture; this will require about half an hour. It may be more convenient, after removing the whey, to place the curd in some other receptacle where the moisture will drain out more easily and quickly—either a slanting rack or a rack with a cloth over it. Add 1 pound of clean salt, thoroughly mix with the curd, and wait fifteen minutes before pressing. Two hoops 11 inches in diameter and 14 inches deep, or one hoop 14 inches in diameter and 14 inches deep, will be needed; or, if small, 12-pound cheeses are wanted, get four 7-inch hoops 12 inches deep. The amount of cheese produced will depend upon the fat content of the milk. It is safe to count on 2.65 pounds of cured cheese for each pound of fat in the milk, if the milk contains anywhere from 3½ to 4½ per cent butter fat.

Take a cheese bandage to fit the hoop and long enough to project 1 or 2 inches at each end. Place a round piece of cotton cloth at the bottom of the hoop as a temporary cap, or cover; then put in the bandage with the lower edge turned in about an inch on top of the bottom cap and the upper edge turned back over the top of the hoop. Fill in the curd, fold in the upper edge of the bandage, put on as a top cover a piece of cotton cloth similar to the one on the bottom, and place in the press. For pressing, use a 1½-inch screw set in a frame and provided with means for turning, if a better press is not available. The rind will not form and the whole operation will be a failure, if sufficient pressure is not applied. A simple lever press is described on page 7.

After an hour take out of the press, adjust and smooth the bandage, covering the edges nicely, and put on cap cloths of same material as the bandage, with the cotton press cloths on the outside of these. Put the cheese back into the hoop, with a strong, round, wooden “follower” closely fitting inside the hoop, on top of the cheese, and press

again until the following day. Then take out the cheese, remove the press cloths, but not the bandage and caps, and place it for curing on a shelf in a room having an even temperature of about 60° F. It should cure in three or four weeks.

The resulting cheese will be presentable and eatable if no gross errors occurred in the making. The operation, however, will probably be a failure from an economic standpoint, because an equal quantity of cheese of guaranteed quality can almost always be purchased from a reliable manufacturer or dealer cheaper than it can be made in a small way. (From the writings of H. E. Cook, of Lewis County, N. Y., a cheese instructor of the State department of agriculture.)

### **PRINT CHEESE.**

Manufacturers and dealers in food products of all kinds are more or less familiar with the advantages to be gained from neat packages and the attractive appearance of the articles offered for sale. Style and finish are important factors in trade, and in making a selection the consumer is influenced by the appearance as well as by the quality of the product. This is well understood by progressive manufacturers and dealers in dairy products, and the necessity of careful attention to these details is continually being urged upon everyone connected with the dairy industry. More consideration in this direction seems to have been given in the past to butter than to cheese, and, excepting some high-priced small packages and jars, cheese is still generally made in large sizes, which are cut into awkward slices at grocery stores and sold by the pound.

One of the most popular butter packages is the 1-pound print. In some markets print butter is quoted at 1 cent or more above the ruling price of other butter, which may be of the same quality but is put up in a less attractive package. This popularity of print butter shows that it is profitable to study the market demands regarding the shape and the appearance of dairy products as well as their flavor, texture, and other qualities.

On account of the demand for print butter, the manufacturers and dealers in dairy supplies have designed a number of machines and appliances for economically molding the butter into print forms. These machines vary somewhat in their construction and manipulation, but they all make the 1-pound print of about the same dimensions— $2\frac{1}{2}$  by  $2\frac{1}{2}$  by  $4\frac{1}{2}$  inches. In some printers a carved board is placed on one side of the mold into which the butter is pressed and this makes an impression in each print of some design or letter which has been selected as a brand or trade-mark by the manufacturer. So much attention has been given to the subject of butter printing that the details are now satisfactorily worked out.

The favorable reputation which print butter has attained suggested the possibility of applying the idea to the manufacture of cheese.

Why can not cheese, as well as butter, be molded into 1-pound prints? After studying this question for two years, it is possible to say that this new form of cheese can be made, and that it is received with much favor by the consumer. The first print cheese was made at the Wisconsin Dairy School during the winter of 1898-99. Since that time some of the details have been changed, but the general plan of the operation is the same as originally carried out. In so far as the cheese is concerned, no deviation has been made from the usual process of making cheddar cheese, except a modification in the pressing and the "follower" used in the press.

The following is the method adopted at the University of Wisconsin: The Cheddar cheese curd is placed in a mold or hoop of rectangular shape, the bottom or "follower" of which is a carved board. This board makes the impression of the raised letters **U W** (University of

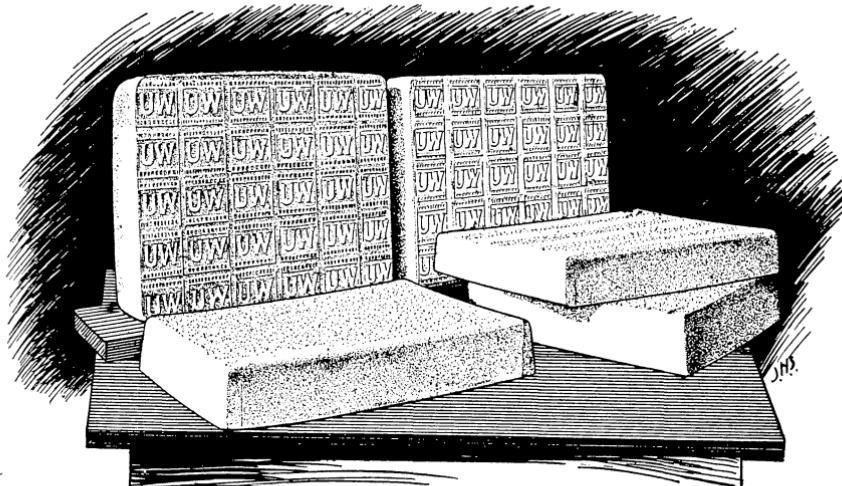


FIG. 3.—Print cheese made at University of Wisconsin.

Wisconsin) and the grooves which mark the cheese into prints, as shown in the illustration. Each section on which **U W** is stamped represents one-half pound, two sections making 1 pound. This 1-pound print of cheese is about the size of a 1-pound print of butter. Its length and width are determined by the carving of the board, which may be made of any size or design to suit a particular trade; the thickness of the block is, of course, regulated by the amount of curd put into the mold each time. The cheeses shown in the illustration weigh between 15 and 16 pounds each and will cut into fifteen 1-pound prints. Each block of fifteen prints is  $11\frac{1}{2}$  by  $13\frac{1}{4}$  by  $2\frac{1}{2}$  inches, each print being  $2\frac{1}{2}$  by  $2\frac{1}{2}$  by  $4\frac{1}{4}$  inches in size.

This cheese was pressed in an upright press, the carved board being placed at the bottom of the rectangular mold and the bandage cloth cut to cover the carved board, sides, and bottom of the cheese. The ends

of the bandage cloth come together on the smooth side of the cheese, and the cloth is cut so as to make smooth, neat corners.

Metal hoops, similar to the Cheddar-cheese hoops, with fasteners, etc., can doubtless be made for this kind of cheese so that they may be used in horizontal gang presses and a number of cheeses put to press at the same time. By carving both sides of the board it can be used for molding two cheeses when the board is placed in the press between them.

There is no difficulty in curing these cheeses in the same way as Cheddar cheese is cured. The bottom and sides should be greased and the cheese turned occasionally, although it should not rest on the carved surface for a very long time. By exercising a little care in handling during the curing process, the cheese can be kept clean and attractive in appearance, and, if well made from good milk, will develop an acceptable flavor that, together with the trade-mark branded into each pound, will be helpful in protecting the reputation of the maker. Print cheese has been cured in a regular Cheddar-cheese curing room at a temperature of 50° to 60° F., and a relative humidity of 60° to 80°. It is very likely that print cheese may be satisfactorily cured in cold storage, and that the cheese so cured will possess a minimum of rind, with an excellent flavor and texture.

This idea has not been patented. The cheese made at the dairy school has been inspected by many visitors, including manufacturers and dealers, who have expressed themselves very favorably concerning the possibilities of the manufacture of print cheese. (From a publication of the Wisconsin Agricultural Experiment Station, by Prof. E. H. Farrington, of the Dairy School, University of Wisconsin.)

### POT CHEESE.

A toothsome and nutritious article of food is made from sour skimmed milk or buttermilk by allowing the casein to coagulate by the action of acid already naturally formed, and then expelling the water by the aid of heat. A considerable number of products, locally distinct and different in the degree of dryness of the curd, are made in this way. The general process of manufacture is to take sour buttermilk, or skimmed milk which has coagulated, heat it gently from 85° to 125° F., according to circumstances, and drain off the whey through a cloth strainer. Then reduce the texture of the resulting curd by kneading with the hands or a pestle; salt is added, and the product is improved by the addition of a small quantity of cream or butter. Some persons consider it an improvement to season by the use of one of the more common spices, as nutmeg, caraway, etc. It is largely made only for domestic consumption, but in most cities and villages, especially during the summer months, there is a considerable demand for fresh cheese of this sort, and its manufacture is often a source of revenue to factories suitably located. It is usually sold and eaten in

a fresh state, but it may be subjected to certain curing processes, which quite materially change its character and which vary widely in different localities. This simple kind of cheese is also called Dutch cheese, cottage cheese, and schmierkase. (Adapted from "Milk and its products," by Prof. H. H. Wing.)

### NEUFCHÂTEL CHEESE.

The fresh morning's milk, while still at a temperature of about 90° F., is set in a stone jar holding 40 pounds or less, and enough rennet is added to coagulate it in about twenty-four hours. It should stand in a room of about 60° F., and a reliable rennet extract should be used. The jar may be covered with a woolen blanket or the like to keep the temperature uniform. When coagulated the whole mass is poured into a piece of cheese cloth, which is either placed in a basket or hung up on four supports fixed for that purpose. It is then left twelve hours to drain. Then the cloth is gathered together around the curd and placed in a square wooden box with perforated bottom and sides, and a pressboard put on with weights; a few stones will answer or a small lever press may be used, such as described on page 7. The curd is pressed for twelve hours and then kneaded by hand on dry cloth into a uniform stiff paste. It requires experience to get exactly the right consistency. If it is too moist, new dry cloths are placed under it, and it is worked until dry enough. But if too dry, it is a sign that either too much rennet has been used or the curd has been pressed too much. In this last case some new curd is added and carefully mixed with the other. When of the right consistency it is put into small molds. Little tin cylinders are usual, of  $2\frac{1}{2}$  inches diameter and 3 inches high. Any little tin can may be used by unsoldering the top and bottom. After smoothing both ends the cylindrical-shaped cheese is pushed out and salted by strewing on both ends and lightly rolling between the hands covered with salt.

The little cheeses are then placed on any kind of a draining board and left for twenty-four hours. If made in any quantity a drying room should be prepared with lath shelves, on which smooth, dry straw is placed, and the cheeses laid upon the straw without touching each other. They are turned often enough to prevent loss of shape or sticking to the straw. Many people prefer this cheese while quite fresh, and it may be used at any time after being dried for a day. But if more age and maturity are preferred, more time and attention are required, with special conditions.

Left upon the straw, white mold may be expected to appear after five or six days. Leave this undisturbed and in ten or fifteen days more the mold becomes blue and the cheeses are then said to have their "first skin." They should then be taken to a cool and rather moist cellar with similar shelves, placed on end on the straw, and turned every three or four days. After three or four weeks in this place, red

spots begin to appear, and the cheese, being then from six weeks to two months old, is considered to be at its best. It takes 6 pounds of milk for 1 pound of cheese.

It is difficult to make cheese of this general class uniform, unless special rooms are provided, but for domestic use this abbreviated description may be followed with an expectation of reasonably satisfactory results. The principles are correctly stated, and the experience necessary to success need not be expensive, as a gallon of milk is enough to use at one time in early trials.

Instead of straw, wooden mats or "splashers" may be used on which to dry the cheese.

This cheese is the kind commonly sold in this country wrapped in tinfoil. Some of that in the market is very poor, being made from skim milk, and is in reality nothing but cottage cheese, although sold under this French name.

#### **ENGLISH CREAM CHEESE.**

Very thick cream is poured carefully into a linen bag and this hung up, with a basin underneath to catch the whey, in a cool room or cellar. The air in the room must be pure, as the cream easily absorbs odors. When the whey is partly drained off the bag is twisted tight and bound so as to dry the curd more; then, after twenty-four to forty-eight hours, according to temperature and the consistency of the cream, the "cheese" is ready to eat, and may be molded as desired. This is hardly cheese, as no rennet is used; perhaps it should be called a "sour cream curd."

#### **FRENCH CREAM CHEESE.**

Enough rennet is added to the morning's milk, set in a jar at a temperature of 70° F., to coagulate in two or three hours, and then left for twenty or twenty-four hours. Instead of any special mold, a common hair sieve may be used. After pouring out the whey gathered on top of the curd, cut the latter into slices with a skimmer and lay it in the sieve to drain. When well drained, add cream in quantities to suit, but not more than that from a quantity of milk equal to that first coagulated. Mix the curd and cream by mashing with a wooden pestle, like a potato masher, until a uniform paste is obtained. This is then placed in wicker molds or baskets lined with muslin. In France heart-shaped molds are made for the purpose. The cheese is used when freshly made. If it is to be kept several days an ice-box will be necessary.

#### **DOUBLE CREAM CHEESE.**

This is the most popular cream cheese in Paris and it is said that about 40,000 are consumed daily in that city. It is also called Swiss cream cheese. According to Pourian, it is made as follows:

Ten pounds of cream and 64 pounds of new milk are mixed carefully and brought to a temperature of 55° to 57° F. Enough diluted rennet extract is added to make it coagulate in twenty to twenty-four hours. The curd is cut into flat pieces with a skimmer and laid on a linen cloth, which is folded over it so as to form a sort of press bag. These bags or packages are laid in a perforated box with boards between them, and when the first flow of whey stops the top board is loaded with a weight of some kind. This pressing takes sixteen to eighteen hours, as a rule; it should continue until whey ceases to escape.

The curd is then spread on a large table and worked and kneaded by hand, while adding enough cream to give it a uniform smooth consistency; after this it is left on the table some hours to become firmer.

The molding may be done by taking in the right hand enough curd to make a cheese, placing it on a piece of paper, and rolling it into a small cylinder. This can not be recommended for commercial purposes. If many of the little cheeses are to be made, a suitable molding apparatus should be provided, which may be constructed substantially as follows: A form, or mold, is made by taking an open tin box or pan of a depth corresponding to the length of the cheeses to be made, the bottom of the pan or box having a convenient number of circular openings into which tin cylinders of the desired dimensions have been soldered. To form the cheeses this mold is placed bottom uppermost on a sheet of perforated tinned steel somewhat larger than the mold and supported by short feet, so that it may stand on a table. By the aid of a wooden piston each cylinder may be lined with a roll of paper. The curd is then dumped on top of the mold, pressed into the cylinders, and struck off smoothly with a piece of board. The whole "form" is then lifted carefully, leaving the cheeses in their paper wrappings on the perforated tin plate. They are then ready to be packed for the market.

This cheese, as analyzed by Pourian, has 55 per cent water, 30 per cent fat, and 15 per cent casein, etc. One dozen weigh about 2 pounds.

(These descriptions of Neufchâtel and Cream cheese are taken from J. H. Monrad's book entitled the A B C of Cheese Making.)

#### **NOTES FOR HOME CHEESE MAKING.**

**Utensils.**—A good vat—one that can be kept clean and sweet and large enough to hold whatever milk is to be used at one time. A press; for the product of from five to eight cows, a simple lever with weights. Accompanying the press must be hoops; a good size is 10 inches in diameter and 8 inches deep, made of heavy tin, edges strong and no top or bottom. A drainer or vessel with perforated bottom, in which the curd is drained; a large basket will do, lined with strainer cloth. A dozen cloths a yard square. A thermometer. A

curd knife or knives. These come in pairs, one to cut horizontally and one vertically; but a long, slim knife will do, or a strong piece of galvanized wire netting, as explained on page 8, or even a strong strip of tin. A suitable room for curing, with a few smooth, wide shelves on which to cure the cheese.

**Rennet.**—Use about one tablespoonful of rennet extract for 3 gallons of milk. If the curd is over one-half hour in coming, increase the quantity of rennet; if less, decrease it. Rennet tablets may be used. (See p. 6.)

**Preparation of the Curd.**—Warm the milk to 85° F., add the rennet and mix thoroughly, then cover and let stand at this temperature for about one-half hour, or until the curd will break, leaving the whey clear. Then cut each way, leaving it in columns about 1 inch square. Now let it stand until the whey rises an inch on top of the curd, then warm the whole gradually, taking two or three hours to reach 98° F., lifting and stirring and breaking it gently with the hand all the time until the pieces are about the size of grains of corn. Be very careful not to crush the curd, as that will cause the cream or fat to escape with the whey. Then let stand at this temperature, stirring it occasionally to keep from packing, until the curd is so firm that when squeezed gently in the hand and the hand opened, it will separate into particles again. The whey should have a slightly acid taste. Then dip the curd into a basket lined with cloth, to cool and drain.

**Salt.**—Salt the curd after it is drained, using 4 ounces of salt to 10 pounds of curd, mixed in carefully but thoroughly; or salt by brine bath or rubbing, after pressing, as described on page 7.

**Pressure.**—The pressure must be gentle at first or the milk fat will run out, thus leaving a poor cheese. Increase the pressure gradually, and in a few hours take the cheese out, turn it, rearrange the bandage, and press as before.

**Curing.**—This is a very important part of cheese making. The room for curing (and it may be in a basement or cellar if the conditions are right) should be, first of all, capable of being kept at an even and medium temperature. From 50° to 60° F. is now regarded as the best for domestic purposes, although the time in curing may be somewhat lengthened thereby. The cooler the room, the slower the curing. If the room at any time gets much warmer than 65°, even for a short period, the cheese is likely to be permanently injured. The room should be fairly dry, but not too dry, and, while being well ventilated, should be free from currents of air. If too dry or subjected to dry currents, the cheese will lose weight and be apt to crack. Great care must be taken to keep out all flies. The bandage should be greased and rubbed and the cheese turned over on the shelf every day or two for a month; later this need be done only once or twice a week. If the cheese should crack, paste strips of cheesecloth or stout paper over the openings.